



The *Blurb*



Newsletter of The Phil-Mont Mobile Radio Club

63 Years of Public Service, 1949 to 2012

Volume 62 Number 11

www.phil-mont.org

November 2012



*November's Gonna be a **Busy Month!***

Presidential Election Daylight Savings Time Ends

Board of Directors Meeting Veterans Day

General Meeting Thanksgiving Day

Whew, I'm tired already!

The Blurb is published monthly by and for the members of The PHIL-MONT MOBILE RADIO CLUB, Inc., whose purpose is to promote Amateur Radio in general, and Mobile Radio in particular. **Copying and quoting** is permitted with a credit line. We gladly exchange publications with other amateur radio clubs. Requests should be sent to the Editor. **Subscriptions** are available to non-members for \$12, addressed to the Treasurer.

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Submissions deadline: All copy must be in the hands of the Editor by the 20th of the previous month.

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W3MHP(12)
KB3SJS(12)
WA3KIO(13)
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Abington, PA 19001

<http://www.phil-mont.org>

Website: Eric N3QV &

Andrew KC2PMW

For club information: Contact any club officer, or the repeaters listed below. Address or club directory changes and articles for the membership e-mail list should be sent to: KB3IV

Sunday Morning Net Schedules

- **2 Meter/ 70cm Net** at 0930L on W3QV repeater
- **10-on-10 Net** at 1000L 28.393 MHz USB (\pm QRM)
- **75 meter Net** at 1020L 3.993 MHz LSB
- **ARES** at 2100L on the W3QV repeater

Committees

Audit: NS3K
Blurb folding: KB3IV
& N3GLU
Directory: KB3IV

DX: N3MT
Emerg.Coor: K3HWE
Field Day: KE3QB
Internet: N3QV &
KC2PMW
Membership: N3XKE

Net Control: KB3IV
Publicity: W3RM
Program: Club VP
Public Service: KE3QB
Refreshments: W3AOK
Repeater: W3AOK

Scholarship: W3RM
Sunshine: N3GLU
VE Program: NS3K
Welcome: N3UBY
Youth: KC2PMW

All visitors are welcome!

The club meets at 7:30 PM on the **second** non-holiday Wednesday each month except July and August at **Roxborough Memorial Hospital**, 5800 Ridge Avenue, Philadelphia, PA 19128
Maps and directions are available at www.phil-mont.org.

License Examinations are held on the fourth **non-holiday Thursday** each month at **Community Ambulance Association, 1414 E. Butler Pike, Ambler PA 19002**

Registration begins at 7:00 P.M. Applicants should contact Jim McCloskey NS3K at 215-275-2979 or jmcclloskey@msn.com for the latest information.

Club Stations W3QV/R: The Jim Spencer Memorial Repeater System

Ridge & Port Royal Avenues, Philadelphia, PA **Trustee: W3RM**

147.03 MHz + PL 91.5 Hz 444.80 MHz + PL 186.2 Hz

Reach us on EchoLink through W3QV-R

W3AA Trustee: WU3I

W3EM: Field Day/special event station Trustee: N3QV

The Officers

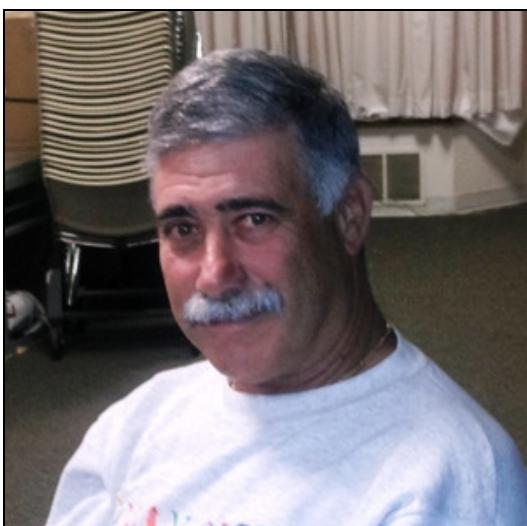
Pres: KB2ERL Bob Nicotera bnic1903@msn.com

Vice Pres: W3STW Al Tribble wstw@juno.com

Sec: KB3MIV Jen Miller jencaz29@gmail.com

Treas: W3RM Richard A. Moll roger.mike@verizon.net

Asst. Treas: N3MT Michael P. Taraborrelli michaelmt_1999@yahoo.com

The Prez Sez ...

The weather is moving in as this is being written. Jersey Shore is getting brunt of storm and I am still here protecting life and limb and my own house. By the time you read this it will be all over and you will have heard all the news.

This is a very important month for Phil-Mont since it is time to present a slate of candidates for election to keep our club running for another year. We will be asking for members to step up and serve at the November 14th general meeting. If you cannot attend our Old Timers Night meeting, but wish to be added to the slate, please contact our Nomination Committee Chairman, Al, W3STW, at wstw@juno.com.

I hope everyone has safely made it through "Sandy" and look forward to seeing you at future club meetings and events.

Happy Thanksgiving to all.

73, Bob KB2ERL

***Phil-Mont
Birthdays & Tidbytes***

November Birthdays

05 Al Tribble - W3STW

07 Jennifer Devirgiliis

12 Arnold Sadwin - KC2HX

14 Bill Nichelson - W3KOC

15 Edythe Victor (XYL WA2DTW)

19 Brad Swanson - N3GLH

20 Bob Gargano - N3YGY

22 Bill Popovic - W3AOK

23 Ted Hassell - KB3HAQ

24 Samuel Leidy - KF3G

Delores Policarpo (XYL N3PP)

27 Mel Toren - N2MT

29 Bob Nicotero - KB2ERL

Betty Walmsley (XYL W3DO)

Lyn Crompton (XYL WA3DSP)

MEMBERSHIP STATS

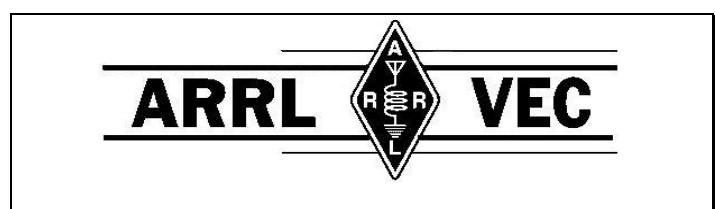
At press time P.M.R.C. has:

83 FULL PAID MEMBERS

10 FAMILY MEMBERS

3 YOUTH MEMBERS

1 HONORARY MEMBER



The Thursday evening VE session is on the 15th this month due to the holiday.

As always, many thanks to our VE team!

From the Secretary...**General Membership Meeting 10/10/2012**

President Bob, KB2ERL opened the meeting at 1935 hours and said the MS150 event went very smoothly. He also reminded all that November is Old Timer's Night, December is club elections and January is Auction Fest.

Vice President Al, W3STW informs us there is a director position open. The qualifications are membership in the club for one year and dues up to date.

He also said nominations will be taken at the November meeting before the December election. Jim, NS3K VE chairman reports all is well with the testing program.

Bill, W3AOK reports the repeaters are working fine.

Rick, ND3B reminds members of the Blurb deadline on the 20th.

With business concluded the guest speaker, Dr. Dennis Silage, K3DS presented an excellent program on the FunCubeDongle which will introduce amateurs to satellite operation.

The meeting ended at 2050 hrs.

de Rick, ND3B



Finished DDS VFO in Hammond enclosure

THIS AND THAT
Miscellaneous Ramblings
Bob Thomas, W3NE



Professor Bob, W3NE
A DIRECT-DIGITAL VFO KIT
Into the 21st Century!

Despite all the moaning over the demise of Heathkit, the amateur community is currently blessed with an abundance of new sources for kits that can be built into useful ham radio equipment. The abundance of QRP kits comes to mind of course, but there also is a variety of kits on the market for other gear ranging from SDRs (software-defined radios) and full-featured HF transceivers to simple operating aids. Somewhere in the middle of that pack are kits for advanced digital-based VFOs, of which one model in particular is the subject of this article.

I have a Harvey-Wells TBS-50 classic boat anchor transmitter from the '50s that needs a VFO for frequency agility on today's bands. A matching VFO made by H-W exclusively for their transmitter is occasionally available on eBay and less often at hamfests, but due to its rarity it costs as much or more than the whole transmitter! Aside from that, the matching VFO has somewhat clunky tuning and excessive drift. While contemplating what to do, I saw a DDS (Direct Digital Synthesis) VFO made by W3HWT from a kit of parts supplied by N3ZI, who is located in Las Vegas, NV.

The N3ZI Model DDS-2012 generates a pure sine wave from 100 kc. to over 30 mc. It is based on Analog Devices' AD9834 Numerically-controlled

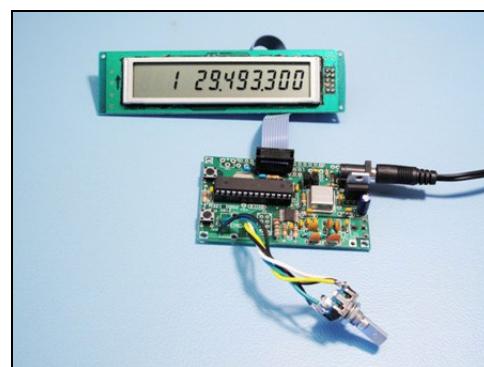
Oscillator, a 20-pin surface mount package that came already soldered to the PC board in the kit I purchased. It includes a crystal-controlled clock oscillator (80 Mc.), a D/A converter that changes digitally-generated RF to a sine wave, and eleven non-volatile memories that store discrete frequencies set by the user. An Atmel microcontroller converts input from a panel-mounted rotary encoder to a serial data stream to adjust 9834 RF output frequency. The microcontroller also selects AD9834 memories where discrete frequencies are stored, and additionally controls a 10-digit LCD readout of VFO frequency and two additional digits assigned to programming and frequency memory addresses. All of that power resides in just two chips and support circuitry on a PC board only 3" long and 1.75" wide. As Dorothy observed, "Toto, I've a feeling we're not in Kansas anymore."

User-programmable memories are accessed through Up/Down buttons. Nine of the memories can be used to store specific frequencies, such as band edges or frequently used net frequencies. One of the additional memories can be assigned to RIT or A/B VFO, activated from an external logic bus. The second special memory is for storing an IF offset that allows the DDS VFO to be used as a local oscillator of a receiver with the LCD displaying actual tuned input frequency; the VFO would then be switched between standard transmitter control to receiver tuning by the station T-R relay. If neither of those functions is required, both special memories can be devoted to additional user-selected frequencies, bringing the total of those to eleven (enough for storing a band edge of every HF amateur band). In addition to all that, the DDS VFO will generate RTTY and PSK output directly from logic levels without use of intermediate audio tones.

Precise tuning in increments as small as one cycle can be made as the rotary encoder knob is turned, so for all practical purposes, tuning is continuous but very slow! However, other tuning steps of 10, 25, 100, and 1000 cycles can be selected by simply tapping the encoder knob. Tuning rate accelerates as the tuning knob is turned so there's no problem moving rapidly from one end of a band to the other. Tuning characteristics depend a lot upon the type of

rotary encoder used. The encoder supplied with the kit employs mechanical switches not known for longevity and it is limited to four steps per revolution. An alternative optical encoder is available with 64 steps per revolution for much smoother frequency control and essentially infinite life.

The DDS-2012 is not a beginner's kit. The manual provides a few suggestions for assembly sequence but there are no step-by-step instructions. Some descriptions of circuit modifications to accommodate LCD substitutions are a little vague but can be deciphered by carefully reading the manual. The LCD supplied with the kit has a single row of twelve 0.5" characters of excellent contrast in normal viewing conditions. Alternative LCDs are offered with the kits at a modest price differential for two-line displays of smaller characters and adjustable backlight intensity and contrast. I have severely limited vision but have found the large characters on the standard LCD to be quite readable without adjustable contrast or a backlight. To illustrate how prices of this sort of item have tumbled, serial input LCD displays exactly like the one supplied in the kit are available from a domestic eBay source for less than one dollar!



Module bench testing

N3ZI supplies VFO kits in four levels of completeness to satisfy builders' skills and facilities at prices ranging from \$45 for a basic kit of parts without a PC board or LCD, \$74.50 for the kit described here, and up to \$84.95 for a full kit with a 2-line color display. My completed kit is housed in a Hammond 6.5"-wide sloping-panel enclosure with two pushbuttons to select frequency memory locations and a third P.B. for programming. Low- and High-Level RF Output BNC connectors are

mounted on the back along with a coaxial 12V power input jack and a DB9 connector for computer programming via an RS-232 serial bus.

WA1FFL (Hagerty Radio Co.) markets a DDS VFO kit with performance somewhat better than the N3ZI product but costing almost twice as much. The improved performance might be advantageous on VHF and HF digital modes but the less expensive N3ZI product is adequate for typical operation on HF bands and meets my needs. WA1FFL also sells an excellent wideband amplifier kit to increase output level of either VFO (typically 350 mv.) to the several volts required by vintage tube transmitters, so I bought one to supplement the 3ZI VFO. Presentation of the WA1FFL amplifier kit is superior to N3DZI's VFO and if that also applies to the Hagerty VFO it would be further justification for its higher price.

DDS VFO construction has been personally very instructive and resulted in a valuable addition to the shack. It is the first major digital device I have built at home since assembling the W3QV repeater voter kit fifteen years ago, but having enjoyed making the VFO so much, it will not be my last modern kit. In addition to its intended use for driving tube transmitters, I plan to apply the VFO's capability for one-cycle resolution to measuring the Q of antenna loading coils where precision frequency control is required for coils with Q in the 300-range (a topic for another article). Once you get started, there is no end to interesting, informative and useful equipment that can be made from the wealth of kits available today. Ham radio is more than two-minute QSOs using an Asian HT through a repeater. Consider searching the internet for kits of interest that will reward you with a useful device and a better understanding of what radio is all about.

Well Sandy didn't do much damage at Blurb headquarters but those swaying 50' trees made me pretty nervous. We only lost a small pine and my vertical is now horizontal. It could have been sooo much worse. Hope everyone is well and damage - free.

Live long and prosper! *de ND3B*

Have you heard about D-Star?

Philadelphia Digital Radio Assn meets the first non-holiday Monday of each month at the Community Ambulance Assn 1440 East Butler Pike Ambler, Pa. 19002 at 7:00 pm.

The club has two D-star repeaters on the following frequencies: On two meters - 146.61 (-) and on 70 cm 445.18125 (-)

I run a weekly club D-star net on Mondays at 8:00 pm local time on the club 2 meter frequency.

de Jim, NS3K

Check out this rope for your antenna project -

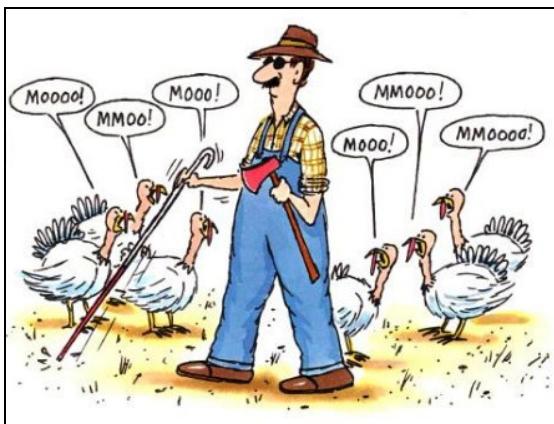
3/32" Braided Olive Drab - Dacron / Polyester cord

This is a high quality braided polyester cord with a breaking strength of 210 pounds. Proudly Made in the U.S.A.!

This is a gorgeous solid braid perfect for dipole antennas. Very low stretch and strong. Will withstand the weather & sun for 7 to 10 years.

***PRICE \$10.00 PER 100 FEET
SOLD IN 100 FOOT LOTS
CONTACT STEVE WU3I AT
WU3I@ARRL.NET***

Go out and vote on Election Day, it's the democratic process in action! What a great country.
And regardless of who wins the best part is ***no more campaign ads!***



Some November dates to remember... or forget!

Nov 1 - Electric Light Bulb Patented (1879)

Nov 2 - Cookie Monster's Birthday

International Space Station Opened in 2000

National Deviled Egg Day

Nov 3 - National Sandwich Day (Proposed by Dagwood Bumstead no doubt!)

Nov 10 - Sesame Street Debuted in 1969

Nov 13 - Vietnam Veterans Memorial was dedicated in 1982

Nov 14 - National Clean Out Your Refrigerator Day

Nov 19 - President Lincoln's Gettysburg Address Delivered in 1863

Nov 24 - Charles Darwin publishes 'The Origin of Species' in 1859

Lee Harvey Oswald assassinated by Jack Ruby in 1963

Nov 30 - Mark Twain born, 1835
Stay At Home Because You're Well Day



Oh no! The turkeys fight back!

November at Phil-Mont

4th Sun W3STW NCS
DST ends- *Turn clocks back 1 hour*
6th Tues Election Day
7th Wed Board Meeting
9th Fri Holocaust began in 1938
11th Sun N3OWM NCS
Veteran's Day
14th Wed General Meeting & Old Timer's Night
15th Thurs VE Session
18th Sun KB3IV NCS
22nd Thanksgiving Day
JFK assassinated in 1963
25th Sun KA3IRJ NCS

Don't forget the ARES net on Sunday nights and the Digital net on Tuesday nights.

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First Class Mail

A word from the V.P.
"What is a Funcube Dongle?" That question was answered at the Phil-Mont Mobile Club's October general meeting by Dr. Dennis Silage, K3DN. The Club thanks Dennis for his excellent lecture and demonstration of the Funcube Dongle. The Dongle is a device that must first be connected to a PC (usually the usb port) in order to access its protected software, the software, in this instance, is for a software designed radio with a receiving range from 150kHz to 1.9GHz, thus covering the range of Amateur Radio frequencies.

de Al W3STW

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The Phil-Mont Mobile Radio Club, Inc

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